Cisco 2600 Series — Modular Access Routers

Product Overview

Cisco Systems extends enterprise-class versatility, integration and power to branch offices with the Cisco 2600 series modular access router family, for an attractive price.

The Cisco 2600 series modular architecture offers network managers and service providers a branch office solution that provides the versatility needed to adapt to changes in network technology, as new services and applications become available. With full support of the Cisco IOS software, Cisco 2600 modular architecture provides the power to support the advanced Quality of Service (QoS), security, and network integration features required in today's evolving enterprise and service provider networks.

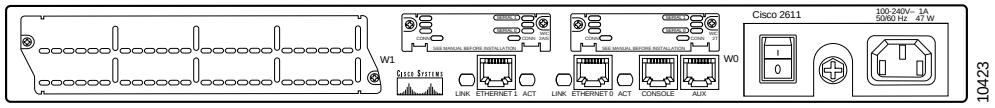
The Cisco 2600 series shares modular interfaces with the Cisco 1600, 1700 and 3600 series, providing a cost-effective solution to meet today's branch office needs for applications such as:

- Secure Internet/intranet access with Firewall protection
- Multiservice voice/data integration
- Analog and digital dial access services
- Virtual Private Network (VPN) access
- Inter-VLAN routing
- Routing with Bandwidth Management
- Delivery of high-speed business class DSL access

While the pace of change in network technology continues to increase, global deregulation of telecommunications has allowed more service providers to compete for data, voice and video network services. Only companies who have designed their network infrastructures with these factors in mind will be able to benefit from the lower prices caused by increased competition and protect themselves from "technology lockout" in the future.

The Cisco 2600 series features single or dual fixed LAN interfaces, a network module slot, two Cisco WAN interface card (WIC) slots, and a new Advanced Integration Module (AIM) slot. LAN support includes single and dual Ethernet options; 10/100 Mbps autosensing Ethernet; mixed Token-Ring and Ethernet; and single Token Ring chassis versions. WAN interface cards support a variety of serial, ISDN BRI, and integrated CSU/DSU options for primary and backup WAN connectivity, while available network modules support multiservice voice/data/fax integration, departmental dial concentration, and high-density serial options. The AIM slot supports the integration of advanced services such as hardware-assisted data compression, hardware-assisted data encryption services for Virtual Private Networks (VPNs) and a dedicated high performance ATM hardware accelerated coprocessor enabling voice and data traffic over ATM networks, while preserving external interface slots for other applications. All Cisco 2600 series routers include an auxiliary port supporting 115Kbps Dial On Demand Routing, ideal for back-up WAN connectivity.

Figure 18-25: Cisco 2600 Rear Panel (Cisco 2611 shown)



As part of Cisco's comprehensive end-to-end networking solution, the Cisco 2600 series allows businesses to extend a cost-effective, seamless multiservice network infrastructure to the branch office. By deploying the Cisco 2600 series router, companies can consolidate the functions of multiple separate devices into a single, compact package that can be managed remotely. Because the Cisco 2600 series is modular, interface configurations are easily customized to accommodate a wide variety of network applications. Some of these applications include the following:

- Multiservice Voice/Data/Fax Integration

The Cisco 2600 Series reinforces Cisco's commitment to provide multiservice voice/data integration capabilities across its product portfolio, allowing network managers to save on long-distance inter-office toll charges and enabling next-generation voice-enabled applications such as integrated messaging and Web-based call centers. Using the sophisticated QoS features of Cisco IOS software, such as the Resource Reservation Protocol (RSVP), Weighted Fair Queuing (WFQ), FRF.11 and FRF.12, and IP Precedence, the Cisco 2600 series allows voice traffic to be digitized, encapsulated in data packets or Frames, and prioritized over other data traffic for a highly efficient, end-to-end network infrastructure for Voice over Frame Relay or Voice over IP.

- Analog and Digital Dial Services

  With support for up to 36 high-speed asynchronous ports or up to 64 ISDN B channels, the Cisco 2600 provides a cost-effective, single-box dial concentration solution for enterprise or service provider networks. By allowing users in remote locations to call a local phone number for access to both the corporate LAN or the Internet, enterprises can reduce toll charges. For example, the Cisco 2600 series provides dial-up capability for up to 32 remote users, accommodating protocols such as PPP, SLIP, ARA, and Xremote on any port, while supporting dedicated connections to the Internet and the corporate intranet. The new integrated 8 and 16 analog modem modules provide for a single box Remote Access Server solution with improved manageability.

- Virtual Private Network (VPN) Access and Firewall Protection

  Many companies have begun to use Virtual Private networks (VPNs) to reduce WAN costs by deploying secure tunneled connections via the Internet. VPNs can be rapidly set up and torn down to provide extranet links to customers, business partners and remote employees. With extra performance required to support advanced Cisco IOS security features such as IPSec and 3DES encryption, the Cisco 2600 series can support multiple encrypted tunnels and provide the advanced security features of the Cisco IOS Firewall feature set. The new Data Encryption AIM enhances this flexibility by using optional hardware-based encryption services by offloading the encryption processing from the Cisco 2600 series Central Processing Unit (CPU), providing 10-times the performance over software-only encryption.

  For example, a Cisco 2610 router in the branch office can provide secure privileged access to business partners while also supporting another connection to a Cisco 2621 or Cisco 2651 in the main office. The dual-LAN architecture of the Cisco 2621 and the Cisco 2651, allows the customer to create an external subnet or "DMZ" for a public Web server outside the firewall while providing security for the internal network. Simultaneously, remote users can connect to local point of presence Cisco 5300 which tunnels across the Internet to the same 2621 or Cisco 2651 saving on long distance or "1-800" connection charges. Cisco IOS features such as tunneling, data encryption, and termination of Remote Access WANs via IPSec, Layer 2 Forwarding (L2F) and Layer 2 Tunneling Protocols (L2TP) make the Cisco 2600 an ideal platform for building virtual private networks or outsourced dial solutions.

- Serial Device Concentration

  The Cisco 2600 provides a cost-effective, flexible solution for concentrating serial devices in remote locations. Async/sync ports provide connections to serial devices such as SDLC concentration devices, alarm systems, ATMs, debit/credit terminals and cash registers. With full Cisco IOS protocol support including SDLC, BSC, BTSUN, STUN, X.25, Frame Relay, and polled async, the Cisco 2600 consolidates traffic from a wide variety of serial devices over a single connection, eliminating costly dial-up BSC links.

  The 4- or 8-port asynchronous/synchronous network modules can be combined with, for example, the mixed Ethernet/Token Ring Cisco 2612 and integrated CSU/DSU and BRI WICs to address various retail or financial branch office environments. Stacking the Cisco 2600 series with Cisco LAN switches such as the Catalyst 1900, 2820 and 2900XL series enables network administrators to manage remote branch office environments efficiently using CiscoWorks and CiscoView network management solutions.

- Mixed WAN services

  Cisco 2600 offers a variety of connectivity options with the reliability and high performance required to address today's evolving branch office WANs. Up to 8 dedicated 128-kbps synchronous connections, one ISDN BRI and one T1/fractional T1 Frame Relay connections can be simultaneously supported with a single Cisco 2600.

- LAN-to-LAN services

The Cisco 2600 offers a unique combination of versatility, integration and power at an attractive price for branch office LAN-to-LAN routing applications. Many of today's multiple device solutions gateways can be integrated into one Cisco 2600 configuration. Cisco 2600's RISC-based processor provides the power needed for the dynamic requirements of the remote branch office, achieving wire speed Ethernet to Ethernet routing with up to 37 thousand packets per second (Kpps) throughput capacity.

- Asymmetrical Digital Subscriber Line (ADSL) services

  The Cisco 2600 series of modular routers now offers an Asymmetrical Digital Subscriber Line (ADSL) WAN interface card (WIC). This offering establishes the industry's first multiservice router family capable of delivering business class broadband service with analog/digital voice integration, scalable performance, flexibility, and security for branch and regional offices. With the addition of the ADSL WIC, the Cisco 2600 is the perfect solution for a variety of organizations that require high-speed business class DSL access on a secure, high performance modular platform.

- Low Density T1/E1 ATM services

  The new High Performance ATM Advanced Integration Module (release 12.2(2)XA) optimizes the Cisco 2600 Modular Multiservice series routers, by offering AAL5 and AAL2 support for low density T1/E1 data and voice connections over ATM networks. The need for high QoS functionality and bandwidth efficency is essential, as more organization's multi-service traffic is carried over branch WAN connections. This requires platforms to be versital and offer multiservice applications to not only support T1/E1 ATM Data over AAL5, but also support both VoIP/VoFR (AAL5) and VoATM (AAL2) requirements. The AIM-ATM provides this versatility by offering both segmentation and reassembly (SAR) functionality and support for up to 60 voice calls over a T1/E1 trunk using AAL5 and AAL2 in conjuction with a HDV network module.

- Evolving Business Applications

  The Cisco 2600's combination of fixed LAN port(s) along with modular interfaces provide customers with the ability to change or meet future networking requirements without a "forklift upgrade."

Options for Cisco 2600 Series

Key Features and Benefits

As part of Cisco's comprehensive end-to-end networking solution, the Cisco 2600 series supports the value of end-to-end Cisco network solutions with the following benefits:

- Multiservice integration

  Allows network managers to save long-distance inter-office toll charges and enable next-generation voice applications such as integrated messaging and Web-based call centers.

- Investment protection

  Because the Cisco 2600 series supports field-upgradable modular components, customers can easily change network interfaces without a "forklift upgrade" of the entire branch office solution. The AIM slot of the Cisco 2600 platform further protects investments by enabling new services such as hardware-assisted data compression and hardware-assisted data encryption without using an external interface slot.

- Reliability

  To maximize network uptime, the Cisco 2600 series offers a redundant power supply (RPS), which can be shared with other Cisco products. The Cisco 2600 series also supports Cisco IOS reliability features such as dial-on- demand routing (DDR) to restore both data and voice services automatically in the event of a primary link failure.

- Lower cost of ownership

  Integrating the functions of CSU/DSUs, ISDN Network Termination (NTI) devices, modems, firewall, compression and encryption devices and other equipment found in branch office wiring closets in a single, compact unit provides a space-saving solution that can be managed remotely using network management applications such as CiscoWorks and CiscoView.

- Part of a Cisco end-to-end solution

As part of Cisco's comprehensive end-to-end networking solution, the Cisco 2600 series allows businesses to extend a cost-effective, seamless multiservice network infrastructure to the branch office.

Standard Features

The Cisco 2600 series is available in the following three performance levels and six base configurations:

- Cisco 2650 and Cisco 2651—up to 37K packets per second (pps), one and two autosensing 10/100 Mbps Ethernet ports
- Cisco 2620 and Cisco 2621—up to 25K pps, one and two autosensing 10/100 Mbps Ethernet ports
- Cisco 2610 through Cisco 2613—up to 15K pps
  - Cisco 2613—One Token Ring port
  - Cisco 2612—One Ethernet port, one Token Ring port
  - Cisco 2611—Two Ethernet ports
  - Cisco 2610—One Ethernet port

Each model also has two WAN Interface Card (WIC) slots, one Network Module slot, and one internal Advanced Integration Module (AIM) slot. These slots share more than 50 different modules across four Cisco product lines. All Cisco 2600s include the Cisco IOS IP feature set; other feature sets may be selected as upgrade options.

Table 18-94: Cisco 2600 Series Standard Configurations

Chassis	No. and Type of Fixed LAN Port(s)	Type of Power Supply Included	No. of Network Module Slots	No. of WAN Interface Card Slots	No. of Advanced Integration Module Slots
Cisco 2610	1 Ethernet	AC	1	2	1
Cisco 2610-DC	1 Ethernet	DC	1	2	1
Cisco 2610-RPS	1 Ethernet	None, requires external RPS	1	2	1
Cisco 2611	2 Ethernet	AC	1	2	1
Cisco 2611-DC	2 Ethernet	DC	1	2	1
Cisco 2611-RPS	2 Ethernet	None, requires external RPS	1	2	1
Cisco 2612	1 Ethernet, 1 Token Ring	AC	1	2	1
Cisco 2612-DC	1 Ethernet, 1 Token Ring	DC	1	2	1
Cisco 2610-RPS	1 Ethernet, 1 Token Ring	None, requires external RPS	1	2	1
Cisco 2613	1 Token Ring	AC	1	2	1
Cisco 2613-DC	1 Token Ring	DC	1	2	1
Cisco 2613-RPS	1 Token Ring	None, requires external RPS	1	2	1
Cisco 2620	1 10/100 Ethernet	AC	1	2	1
Cisco 2620-DC	1 10/100 Ethernet	DC	1	2	1
Cisco 2620-RPS	1 10/100 Ethernet	None - Requires external RPS	1	2	1
Cisco 2621	2 10/100 Ethernet	AC	1	2	1
Cisco 2621- DC	2 10/100 Ethernet	DC	1	2	1
Cisco2650	1 10/100 Ethernet	AC	1	2	1
Cisco 2650-DC	1 10/100 Ethernet	DC	1	2	1
Cisco 2650-RPS	1 10/100 Ethernet	None - Requires external RPS	1	2	1
Cisco 2651	2 10/100 Ethernet	AC	1	2	1
Cisco 2651-DC	2 10/100 Ethernet	DC	1	2	1
Cisco 2651-RPS	2 10/100 Ethernet	None - Requires external RPS	1	2	1

1. Requires the PWR600-AC-RPS-NCAB or the PWR600-DC-RPS-CAB, see the “600-Watt Redundant AC Power System (RPS)” sections in the “Power Supplies and Power Cords” chapter.

Note See the end of the Cisco 2600 section for a list of all Cisco 2600 supported network modules (NMs), advanced integration modules (AIMs), WAN interface cards (WICs), and Voice interface cards (VICs)

Network Modules, WAN Interface Cards, and Advanced Integration Modules

The Cisco 2600 shares modular interfaces with the popular Cisco 1600, 1720 and 3600 series. The following is a summary of the interfaces currently supported by the Cisco 2600.

For detailed information about network modules, WAN interface cards, and advanced integration modules, see the Channelized OC-12 Line Card section.

Cisco Multiservice over Virtual Private Network Reference Architecture

The Cisco Multiservice over Virtual Private Network (VPN) Reference Architecture is the industry’s first, fully-tested H.323-based Class-4 PBX interconnect solution which enables service providers to offer their multi-site enterprise customers a managed, packet-based integrated voice and data service over a VPN infrastructure. Built on an open architecture, this standards-based VPN solution supports either MPLS or IPsec-based infrastructures.

http://www.cisco.com/warp/public/cc/so/neso/vpn/msovpn

Specifications

Hardware

Table 18-95: Technical Specifications for Cisco 2600 Series

Description	Specification
Console Port/Speed	115.2 Kbps
Auxiliary Port/Speed	115.2 Kbps with Dial on Demand Routing capability
Processor	Motorola MPC860 80 MHz RISC (Cisco 265x); 50 MHz RISC (Cisco 262x); 40 MHz RISC (Cisco 261x)
DRAM Memory	Two DIMM slots supporting, 32 to 64MB (Cisco 261x and Cisco 262x, uses DRAM); 32 to 128MB (Cisco 265x only, uses SDRAM)
Flash Memory	One SIMM slot supporting, 8 to 16MB (Cisco 261x); 8 to 32MB (Cisco 262x[1] and Cisco 265x)
Software options	IP feature set bundled with chassis, other IOS feature sets offered as upgrade options Supported Releases: 11.3T or later, including 12.0 and 12.0T
Other components included with Chassis	IP IOS feature set, requires Flash and System Memory to support the IP feature set Power Cable LAN Cable(s) Auxiliary and Console Cables 19 in. Rack Mount Brackets Configuration documentation Reference documentation (CD ROM)
Router management options	Cisco View, Cisco Works, Cisco Voice Manager, ConfigMaker, Enhanced Set-up

1. Cisco 262x requires Cisco IOS version 121(3)T,12.1(5)T, 12.1(5)XM, 12.1(5)YB, 12.2T, 12.2 or a later release for 32MB Flash support

Table 18-96: Power Requirements for Cisco 2600 Series

Description	Specification
Power Dissipation	72W max.
AC input voltage	100 to 240 VAC
AC input current	1.5A
Frequency	47 to 64 Hz
DC Input Voltage	–38V to –75V
DC Input Current	2A

Table 18-97: Physical and Environmental Specifications for Cisco 2600 Series

Description	Specification
Operating Temperature	32 to 104˚F (0 to 40˚C)
Storage Temperature	–13 to 158˚F (–25 to 70˚C)
Humidity	5 to 95% non-condensing
Noise Level	38 dbA min./ 42 dbA max.
Dimensions (H x W x D)	1.69 x 17.5 x 11.8 in. (4.3 x 44.5 x 30 cm)
Weight (average shipping)	8.85 lb. (4.02 kg) min. 10.25 lb. (4.66 kg) max.

Table 18-98: Regulatory Approvals for Cisco 2600 Series

Description	Specification
Regulatory compliance	FCC Part 15 Class B. For additional compliance information, refer to the 2600 Series Public Network Certification document.

The Cisco 2600 series conforms to a number of safety, EMI, immunity and network homologation standards. Details of the regulatory specifications can be found on the World Wide Web at the following URL:

www.cisco.com/public/Support_root.shtml

Note For detailed information about network modules (NMs), WAN interface cards (WICs) and Voice Interface cards (VICs), see the Channelized OC-12 Line Card section in this chapter.

Software

Table 18-99: Cisco 2600 Series Software Specifications and Minimum Recommended Memory for IOS Version 12.2 mainline

Feature Sets	IP	IP/IPX/AT/DEC	Remote Access Services	Enterprise	Enterprise/ APPN
Base	8 MB Flash 24 MB DRAM	8 MB Flash 32 MB DRAM	8 MB Flash 24 MB DRAM	----------	----------
Firewall only no encryption	8 MB Flash 32 MB DRAM	----------	----------	----------	----------
Plus	16 MB Flash 40 MB DRAM	16 MB Flash 40 MB DRAM	----------	16 MB Flash 48 MB DRAM	16 MB Flash 48 MB DRAM
Firewall and Plus	-------	16 MB Flash 48 MB DRAM	----------		----------
Plus features and 56-bit IPSec encryption	16 MB Flash 48 MB DRAM	----------	----------	16 MB Flash 48 MB DRAM	16 MB Flash 48 MB DRAM
Plus features and triple DES 56 bit (3DES) IPSec encryption	16 MB Flash 48 MB DRAM	----------	----------	16 MB Flash 48 MB DRAM	16 MB Flash 48 MB DRAM
Firewall, Plus features and 56-bit IPSec encryption	16 MB Flash 48 MB DRAM	----------	----------	16 MB Flash 48 MB DRAM	----------
Firewall, Plus features and triple 56 bit (3DES) IPSec encryption	16 MB Flash 48 MB DRAM	----------	----------	16 MB Flash 48 MB DRAM	----------

1. Some configurations may require additional memory.

Software Ordering Information

Refer to the “Cisco IOS Software” chapter for detailed software feature set information.

Memory, Power Supply and Cable Options for the 2600 Series Routers

Memory

The Cisco 2600 series uses two types of replaceable or upgradeable memory: DRAM and Flash. DRAM memory is implemented with up to two DIMMs in any combination of sizes. Flash memory is implemented with a single SIMM. The Cisco 2600 series ships standard with 32 MB of DRAM memory, which can be upgraded to a maximum of 64 MB in the

Cisco 261x and 262x (up to 32 MB in each socket) and up to 128 MB in the Cisco 265x (up to 64 MB in each socket). The Cisco 2600 series router ships standard with 8 MB of Flash, expandable to 16 MB of Flash supported by a single socket in the Cisco 261x and up to 32 MB of Flash supported by a single socket in the Cisco 262x and Cisco 265x series.

The Cisco 2600 series routers use a DRAM memory configuration that is different from other Cisco routers. Unlike the Cisco 4000 series routers, for example, which have separate physical locations for processor memory and packet memory, the Cisco 2600 series routers use one pool of DRAM memory. The DRAM is partitioned into processor memory and packet memory areas. For example, the memory of a 16 MB DRAM configuration is split into 12 MB for processor memory and 4 MB for the packet memory.

The Cisco 2600 allows you to load new system images via the LAN from a TFTP server. You can also load images from a local or remote PC through the console or auxiliary ports using the Xmodem or Ymodem protocols.

Redundant Power Supply

The RPS adapter option is available for the Cisco 2600 series as a spare (ACS-2600RPS=) or as part of a factory configured chassis (Cisco26xx-RPS). The RPS adapter takes the place of the power supply and must be used with the PWR-600 RPS unit, connected via the associated RPS power cable. For more details, please refer to the PWR-600 section in this catalog.

DC Power Supply

A single-feed DC power supply option is available for the Cisco 2600 series as a spare (PWR-2600-DC=) or as part of a factory configured chassis, (Cisco26xx-DC).

NEBS Level 3 / ETSI Kit

A NEBS level 3 / ETSI kit ensures a Cisco 2600 router meets NEBS level 3 / ETSI standards for networking equipment, usually found in central office environments. This kit includes: the 23 in. Hendry bay/24 in. rack mounts, the ground lug kit, shielded LAN cables, bezel replacement label (for depth reduction in Central Office rack environments) and related documentation. This kit is available for the Cisco 2600 series as a spare (ACS-2600NEBS/ETSI=) and is included with the Cisco 2650-DC and Cisco 2651-DC models.

All software part descriptions and part numbers for Cisco products can be accessed using the online Cisco Pricing Tool at

http://www.cisco.com/cgi-bin/order/pricing_root.pl

Ordering Information

Product Part Numbers

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